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Wendy

Wendy LIM

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Art Unit 2811

16 SEP 2004

Confirmation No. 1967

Legal Staff
International Division

Sender: Dexter Chin
Horizon IP Pte Ltd
Office (65) 9836 9908

Subject Matter: US Patent Application Number: 10/707,968
Renewed Petition Under 37 CFR 1.182

Total Pages (including cover sheet): 11 pages

Attachments:

- a) Certificate of Transmission
- b) Transmittal Form
- c) Fee Transmittal Form
- d) Renewed Petition Under 37CFR 1.182
- e) Copy of ePAVE Screenshot - Exhibit A
- f) Copy of Application Data Sheet - Exhibit B
- g) Copy of Specification (Electronic Version) - Exhibit C

PTO/SB/97 (05-03)

Approved for use through 04/30/2003. OMB 0851-0031

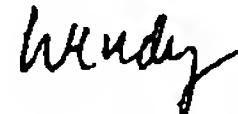
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Wendy LIM

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Note: Each paper must have its own certificate of transmission, or this certificate must identify each submitted paper.

- a) Transmittal Form
- b) Fee Transmittal Form
- c) Renewed Petition Under 37 CFR 1.182
- d) Copy of ePAVE Screenshot - Exhibit A
- e) Copy of Application Data Sheet - Exhibit B
- f) Copy of Specification (Electronic Version) - Exhibit C

This collection of information is required by 37 CFR 1.8. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.8 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SB/21 (02-04)

Approved for use through 07/31/2008, OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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TRANSMITTAL
FORM

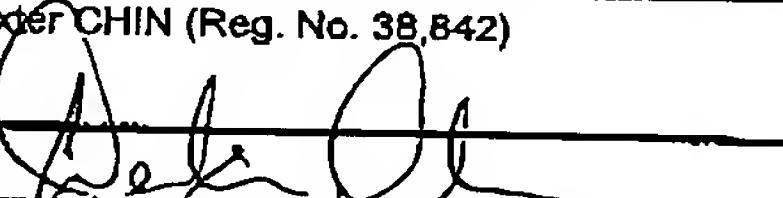
(to be used for all correspondence after initial filing)

| | | | |
|--|----|------------------------|----------------------|
| | | Application Number | 10/707,968 |
| | | Filing Date | January 29, 2004 |
| | | First Named Inventor | Dominique MANGELINCK |
| | | Art Unit | 2811 |
| | | Examiner Name | Not Assigned Yet |
| Total Number of Pages in This Submission | 11 | Attorney Docket Number | ASTAP2004-01 |

ENCLOSURES (Check all that apply)

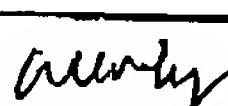
| | | |
|---|---|--|
| <input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input checked="" type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance communication to Technology Center (TC) <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below): |
| Remarks Renewed Petition under 37 CFR 1.182 a) Copy of ePAVE Screenshot - Exhibit A b) Copy of Application Data Sheet - Exhibit B c) Copy of Specification (Electronic Version) - Exhibit C | | |

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

| | |
|-------------------------|--|
| Firm or Individual name | Dexter CHIN (Reg. No. 38,842) |
| Signature |  |
| Date | September 16, 2004 |

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| | |
|-------------------------|--|
| Typed or printed name | Wendy LIM |
| Signature |  |
| Date September 16, 2004 | |

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PTO/SB/17 (10-03)

Approved for use through 07/31/2006. OMB 0851-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL

for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 110)

METHOD OF PAYMENT (check all that apply)

 Check Credit card Money Order Other None
 Deposit Account:

Deposit Account Number: 50-2388
Deposit Account Name: Horizon IP Pte Ltd

The Director is authorized to: (check all that apply)

Charge fee(s) indicated below Credit any overpayments
 Charge any additional fee(s) or any underpayment of fee(s)
 Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

| Large Entity | Small Entity | Fee Code (\$) | Fee Code (\$) | Fee Description | Fee Paid |
|--------------------------|--------------|------------------------|---------------|-----------------|----------|
| 1001 770 | 2001 385 | Utility filing fee | | | |
| 1002 340 | 2002 170 | Design filing fee | | | |
| 1003 530 | 2003 265 | Plant filing fee | | | |
| 1004 770 | 2004 385 | Reissue filing fee | | | |
| 1005 160 | 2005 80 | Provisional filing fee | | | |
| SUBTOTAL (1) (\$) | | | | | |

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| Total Claims | Independent Claims | Multiple Dependent | Extra Claims | Fee from below | Fee Paid |
|--------------|--------------------|--------------------|--------------|----------------|----------|
| | | | -20** = | | |
| | | | - 3** = | | |
| | | | | | |

| Large Entity | Small Entity | Fee Description |
|--------------------------|--------------|--|
| 1202 18 | 2202 9 | Claims in excess of 20 |
| 1201 86 | 2201 43 | Independent claims in excess of 3 |
| 1203 290 | 2203 145 | Multiple dependent claim, if not paid |
| 1204 86 | 2204 43 | ** Reissue independent claims over original patent |
| 1205 18 | 2205 9 | ** Reissue claims in excess of 20 and over original patent |
| SUBTOTAL (2) (\$) | | |

**or number previously paid, if greater; For Reissues, see above

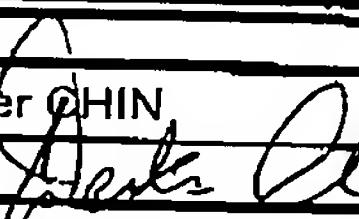
| Complete if Known | |
|----------------------|----------------------|
| Application Number | 10/707,968 |
| Filing Date | January 29, 2004 |
| First Named Inventor | Dominique MANGELINCK |
| Examiner Name | Not Assigned Yet |
| Art Unit | 2811 |
| Attorney Docket No. | ASTAP2004-01 |

FEE CALCULATION (continued)

3. ADDITIONAL FEES

| Large Entity | Small Entity | Fee Code (\$) | Fee Code (\$) | Fee Description | Fee Paid |
|-----------------------------------|--------------|--|---------------|-----------------|----------|
| 1051 130 | 2051 65 | Surcharge - late filing fee or oath | | | |
| 1052 50 | 2052 25 | Surcharge - late provisional filing fee or cover sheet | | | |
| 1053 130 | 1053 130 | Non-English specification | | | |
| 1812 2,520 | 1812 2,520 | For filing a request for ex parte reexamination | | | |
| 1804 920* | 1804 920* | Requesting publication of SIR prior to Examiner action | | | |
| 1805 1,840* | 1805 1,840* | Requesting publication of SIR after Examiner action | | | |
| 1251 110 | 2251 55 | Extension for reply within first month | | | 110 |
| 1252 420 | 2252 210 | Extension for reply within second month | | | |
| 1253 950 | 2253 475 | Extension for reply within third month | | | |
| 1254 1,480 | 2254 740 | Extension for reply within fourth month | | | |
| 1255 2,010 | 2255 1,005 | Extension for reply within fifth month | | | |
| 1401 330 | 2401 165 | Notice of Appeal | | | |
| 1402 330 | 2402 165 | Filing a brief in support of an appeal | | | |
| 1403 290 | 2403 145 | Request for oral hearing | | | |
| 1451 1,510 | 1451 1,510 | Petition to institute a public use proceeding | | | |
| 1452 110 | 2452 55 | Petition to revive - unavoidable | | | |
| 1453 1,330 | 2453 665 | Petition to revive - unintentional | | | |
| 1501 1,330 | 2501 665 | Utility issue fee (or reissue) | | | |
| 1502 480 | 2502 240 | Design issue fee | | | |
| 1503 640 | 2503 320 | Plant issue fee | | | |
| 1460 130 | 1460 130 | Petitions to the Commissioner | | | |
| 1807 50 | 1807 50 | Processing fee under 37 CFR 1.17(q) | | | |
| 1806 180 | 1806 180 | Submission of Information Disclosure Stmt | | | |
| 8021 40 | 8021 40 | Recording each patent assignment per property (times number of properties) | | | |
| 1809 770 | 2809 385 | Filing a submission after final rejection (37 CFR 1.129(a)) | | | |
| 1810 770 | 2810 385 | For each additional invention to be examined (37 CFR 1.129(b)) | | | |
| 1801 770 | 2801 385 | Request for Continued Examination (RCE) | | | |
| 1802 900 | 1802 900 | Request for expedited examination of a design application | | | |
| Other fee (specify) | | | | | |
| *Reduced by Basic Filing Fee Paid | | | | | |
| SUBTOTAL (3) (\$) | | | | | |

SUBMITTED BY (Complete if applicable)

| | | | | | |
|-------------------|--|-----------------------------------|--------|-----------|--------------------|
| Name (Print/Type) | Dexter CHIN | Registration No. (Attorney/Agent) | 38,842 | Telephone | +65 98369908 |
| Signature |  | | | Date | September 16, 2004 |

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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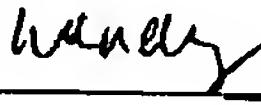
Appl. No.: 10/707,968
Renewed Petition under 37 CFR 1.182, dated September 16, 2004
Response to Decision of June 25, 2004

PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/707,968 Confirmation No. : 1967
Applicant : Dominique **MANGELINCK**
et al.
Filed : January 29, 2004
TC / A.U. : 2811
Examiner : Not Assigned Yet
Docket No. : ASTAP2004-01
Customer No. : 031366
Title : Gate Electrodes and the Formation Thereof

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September 16, 2004.

Signed: 

Wendy LIM

Mail-Stop PCT
Commissioner for Patents
Office of PCT Legal Administration
P.O. Box 1450
Alexandria, Virginia 22313-1450

Renewed Petition Under 37 CFR 1.182

Sir:

In response to the Decision mailed on June 25, 2004 (Decision) in the above-identified application, Applicant respectfully requests reconsideration on the merits for the petition under 37 CFR § 1.182 (Petition) filed on May 26, 2004.

Appl. No.: 10/707,968

Renewed Petition under 37 CFR 1.182, dated September 16, 2004
Response to Decision of June 25, 2004

In the Decision, the Examiner dismissed the Petition without prejudice for the following reasons:

- i) although the EFS software may be used to file a continuation of a PCT application, it does not permit the filing of a national stage application based on a PCT application;
- ii) the fact that Applicant may have incorrectly entered text into the "Continuing Data" field does not enable Applicant to submit an impermissible application type; and
- iii) Applicant has failed to show sufficient cause (e.g., the loss of patent rights) for the Petition to be granted.

With respect to point i), Applicant respectfully disagrees. Applicant refers the Examiner to the Continuity Data page under the Application Data Sheet section of the EFS software. *See Exhibit A.* As clearly evident, the Continuity Data page allows an applicant to select that the electronically filed application is the national phase of an international application under 35 U.S.C. § 371. *See Exhibit A, element a.* Applicant therefore submits that the EFS software does permit the filing of a national stage application based on a PCT application.

As to point ii), Applicant also respectfully disagrees. The Application Data Sheet is automatically generated by the EFS software based on information provided in the various pages under the Application Data Sheet section, such as from the Continuity Data page as discussed above. *See Exhibit B.* Since the Application Data Sheet is automatically generated by the EFS software, Applicant could not have incorrectly entered text into the "Continuing Data" field of the Application Data Sheet as stated by the Examiner. As clearly indicated by

Appl. No.: 10/707,968

Renewed Petition under 37 CFR 1.182, dated September 16, 2004
Response to Decision of June 25, 2004

the automatically generated Application Data Sheet, the EFS software does recognize that the electronically filed application is a "National Stage of SG application number PCT/SG02/00174, filed 2002-07-31, now Published". *See Exhibit B, element b.* Applicant therefore submits that a national stage application based on an international application under 35 U.S.C. § 371 is a permitted application type and that the EFS software does permit and recognize the filing of such an application.

Furthermore, the specification, as originally filed, under the EFS software contains a reference clearly indicating that the Application is a National Stage of the International Application. *See Exhibit C, element c.* Applicant therefore submits that the Application fully complies with 37 CFR 1.495(g) by clearly identifying it as a submission to enter national stage under 35 U.S.C. 371.

As for point iii), Applicant submits that failure to grant this renewed petition would cause the application to lose its priority date of July 31, 2002, resulting in Applicant's subsequent loss of patent rights. Therefore, sufficient cause has been shown for this petition to be granted.

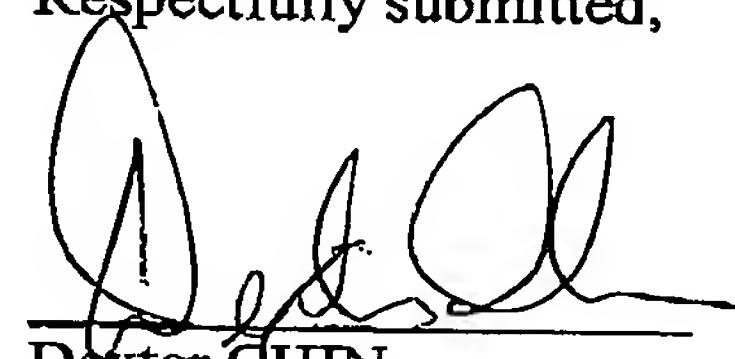
In view of the evidence presented, Applicant respectfully requests that this renewed petition under 37 CFR 1.182 be granted, recognizing that US Application No. 10/707,968 is a national stage of PCT Application No. PCT/SG02/00174 under 35 U.S.C. §371. Issuance of a corrected formal filing receipt is respectfully requested and most appreciated.

Appl. No.: 10/707,968
Renewed Petition under 37 CFR 1.182, dated September 16, 2004
Response to Decision of June 25, 2004

Please charge the extension fee for one month of \$110.00 to Deposit Account No. 50-2388. Although Applicant believes that no other fees are due, the Commissioner is nevertheless authorized to charge any additional fees that may be required, or credit any overpayment to this account.

Date : September 16, 2004

Respectfully submitted,



Dexter CHIN
Attorney for Applicant
Reg. No. 38,842

Horizon IP Pte Ltd
166 Kallang Way,
6th Floor
Singapore 349249
Tel: (65) 9836 9908
Fax: (65) 6746 8263

Exhibit A**BEST AVAILABLE COPY**

ScPave 5.1 - New utility / Application Data Sheet / Continuity data (Status: Submission completed)

File Edit View Help

Actions

- Add common data elements
- Attach files to the project
- Validate the project
- Submit to USPTO
- Obtain acknowledgement receipt

Continuity Data

Continuity Information

| | | | |
|----------------|-------------|----------|-----------|
| Application ID | Filing Date | File No. | Status |
| PCT/SG02/00174 | 2002-07-31 | SG | Published |

This application is a 371 of international.

Preface Phrases

This application is a Said application is a

Relationship

continuation of division of continuation in part of a 371 of international

substitution for reissue of non provisional of re-examination of

Application Information

Application Num: PCT/SG02/00174 Filing Date: 2002-07-31 (yyyy-mm-dd)

Country: SINGAPORE (SG)

Status

Patent Granted Application Status

Patent: Issue Date: 2004-09-10 (yyyy-mm-dd)

Country: UNITED STATES OF AMERICA Kind Code:

Application Status: Published

Add Update Delete

<< Back Next >> Help

Legends

- Required for this submission by
- Required, but allowed to submit
- Optional for this submission by
- Required for some submissions

Done

*** RX REPORT ***

RECEPTION OK

| | |
|-------------------|-------------|
| TX/RX NO | 7224 |
| RECIPIENT ADDRESS | 6567468263 |
| DESTINATION ID | |
| ST. TIME | 09/16 01:59 |
| TIME USE | 03 '31 |
| PGS. | 11 |
| RESULT | OK |

US-Request

RECEIVED MAIL COPY

Exhibit B

APPLICATION DATA SHEET

Electronic Version v14
 Stylesheet Version v14.0

| | | |
|--------------------|---|--|
| Title of Invention | Gate Electrodes and the Formation Thereof | |
|--------------------|---|--|

| | |
|-------------------------|------------------|
| Application Type: | regular, utility |
| Attorney Docket Number: | ASTAP2004-01 |

(b)

Correspondence address:

Customer Number: 031366

031366

Continuing Data:

This is a National Stage of SG application number PCT/SG02/00174, filed 2002-07-31 , now Published.

Priority Data:

Doc.No: 0104614-3; Country - SG; Date: 2001-07-31 us-priority-claimed

Inventors Information:

Inventor 1:

| | |
|---------------------------------|--|
| Applicant Authority Type: | Inventor |
| Citizenship: | FR |
| Name prefix: | Mr. |
| Given Name: | Dominique |
| Family Name: | Mangelinck |
| City of Residence: | Marseille |
| Country of Residence: | FR |
| Address-1 of Mailing Address: | L2MP, UMR CNRS 6137, Case 151, |
| Address-2 of Mailing Address: | Faculte de St Jerome, Marseille Cedex 20, France 13397 |
| City of Mailing Address: | Marseille |
| State of Mailing Address: | |
| Postal Code of Mailing Address: | 13397 |
| Country of Mailing Address: | FR |
| Phone: | |
| Fax: | |

Exhibit C

SPECIFICATION

[Electronic Version 1.2.8]

GATE ELECTRODES AND THE FORMATION THEREOF

Cross Reference to Related Applications

(c) 

This application is the National Stage of International Application No. PCT/SG02/00174, filed July 31, 2002, and which was published in English under PCT Article 21(2) as WO 03/012876 A1 on February 13, 2003. The international application claims priority to Singaporean Application No. 200104614-3, filed July 31, 2001.

Background of Invention

[0001] Referring to Figure 1 of the accompanying drawings, a complementary metal oxide semiconductor (CMOS) transistor comprises an n channel MOS (NMOS) and a p channel MOS (PMOS). Historically, a polycrystalline n+-Si gate is used as a gate electrode both in NMOS and PMOS transistors. For PMOS transistors additional boron implantation into the channel region of the Si substrate is needed to control the threshold voltage because of the low work function of n+-Si. This can produce short channel effects and large sub-threshold currents and thus the PMOS transistor is less scaleable than the NMOS transistor. In order to solve this problem, a dual gate configuration where polycrystalline n+-Si and p+-Si are used as the gate for the NMOS and PMOS transistors, respectively, has been suggested. However, the dual gate CMOS has drawbacks, most notably boron penetration (for PMOS) through the gate oxide and the poly-depletion effect. Instead of using a dual gate, a material with a work function close to the value of the middle of the bandgap of silicon (4.61 eV), can be used for both NMOS and PMOS transistors. A material with such a work function is called a mid-gap material and the process utilising this material for a gate electrode is known as mid-gap CMOS technology.

[0002] In addition, the contact surface of the gate electrode is actually provided by a silicide layer (TiSi₂, CoSi₂, PtSi₂, PtSi or NiSi) on top of the polycrystalline Si gate (e.g. n+-Si) in current CMOS fabrication processes. At relatively high temperatures (e.g. 600°C), the silicide film is usually degraded by two phenomena: inversion and agglomeration. Inversion is due to the grain growth of Si during the formation of